



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/536,508	05/25/2005	Ryuji Fukuda	5404/105	6481

757 7590 08/02/2007
BRINKS HOFER GILSON & LIONE
P.O. BOX 10395
CHICAGO, IL 60610

EXAMINER

MULLIS, JEFFREY C

ART UNIT	PAPER NUMBER
----------	--------------

1711

MAIL DATE	DELIVERY MODE
-----------	---------------

08/02/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/536,508

Applicant(s)

FUKUDA ET AL.

Examiner

Jeffrey C. Mullis

Art Unit

1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 5-25-05, 9-5-06
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 6, 7 and 9-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Shim et al., Journal of Polymer Science: Part A: Polymer Chemistry, Vol. 36, 2997-3012 (1998).

Shim discloses a composition containing solvent, and incompletely coupled polystyrene-polyisobutylene block copolymer containing alkenyl end units. Note Figures 6 and 10 in this re. Since applicants component "B" is merely recited to be a "polymer", both the coupled and uncoupled (prearms) of Shim read on applicants "B" as well as "A" and Shim therefore anticipates claim 1. Furthermore, sequential reaction of monomers to produce block copolymers often results in homopolymer as an impurity due to failure to initiate subsequent charges of monomer and/or chain transfer and Shim's material at least prior to purification by precipitation therefore also would appear to contain some homopolymer. Note that Shim recognized this problem implicitly and analyzed the purified material for homopolymer in the last complete sentence in column 1 of page 2999. Those claims encompassing polystyrene reinforcing material are therefore also

anticipated. With re to plasticizers, small molecules such as commonly used for solvents commonly function as plasticizers.

Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamashita et al. (US 6,140,418) in view of Nakagawa et al. (US 7,129,294) and further in view of Yamanaka (US 6,773,758).

Yamashita discloses a composition containing an aromatic vinyl-isobutylene block copolymer in combination with a crosslinked rubber (abstract) such as isobutylene rubber (column 6, lines 22-28). Fillers (as in applicants reinforcing materials) and plasticizers may be added at column 9, lines 63- column 10, line 30. Dynamic crosslinking is disclosed at column 11, lines 1-27 or the rubber may be precrosslinked at column 9, lines 1-6. Crosslinking agents may be added at column 7, lines 3-5. With re to the polystyrene of claim 12 , note that the paragraph bridging the columns on page 2999 of Shim cited above implies that homopolystyrene is inherently an expected side product in formation of styrene-isobutylene block copolymers and there is no lower limit on the amount of polystyrene in claims 12 and Yamashita therefore appears to inherently meet the limitation of claim 12.

Patentees do not disclose that the isobutylene rubber contains an alkenyl end group.

Nakagawa discloses that crosslinked polymers such as polyisobutylene have excellent heat resistance and durability when alkenyl terminated (column 1, lines 51-61). Hence it would have been obvious to a practitioner having an ordinary skill in the

Art Unit: 1711

art at the time of the invention to provide alkenyl end groups to the polyisobutylenes of the primary reference in order to extend the benefits of the secondary reference to the primary reference absent any showing of surprising or unexpected results. Allyl terminated polyisobutylene may be made by reaction of with allyltrimethylsilane at column 31, lines 25-35.

With re to conversion of a chlorine terminal polyisobutylene to allyl terminated material note that Yamanaka at column 4, lines 50-55 discloses such a method and that conversion of halogen materials to alkenyl containing ones is also disclosed by Nakagawa at column 10, lines 55-65. Hence it would have been obvious to a practitioner having an ordinary skill in the art at the time of the invention to react the chloro terminated polyisobutylene of Nakagawa with allyl trimethylsilane as taught by Yamanaka in order to obtain the allyl terminated polyisobutylene suggested for use by Nakagawa in the process of the primary reference motivated by the need for an allyl terminated polyisobutylene to practice the invention of Yamashita as modified by Nakagawa absent any showing of surprising or unexpected results.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422

Art Unit: 1711

F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-18 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-18 of U.S. Patent No. 7,105,611.

Although the conflicting claims are not identical, they are not patentably distinct from each other because the scope of the claims overlaps.

Any inquiry concerning this communication should be directed to Jeffrey C. Mullis at telephone number 571 272 1075.

Jeffrey C. Mullis
Primary Examiner
Art Unit 1711

JCM

7-27-07

Jeffrey Mullis
Primary Examiner
Art Unit 1711

